

## DATABASE OPTIMIZATION APPARATUS AND METHOD

Arnold et al.

Docket No. ROC920010318US1

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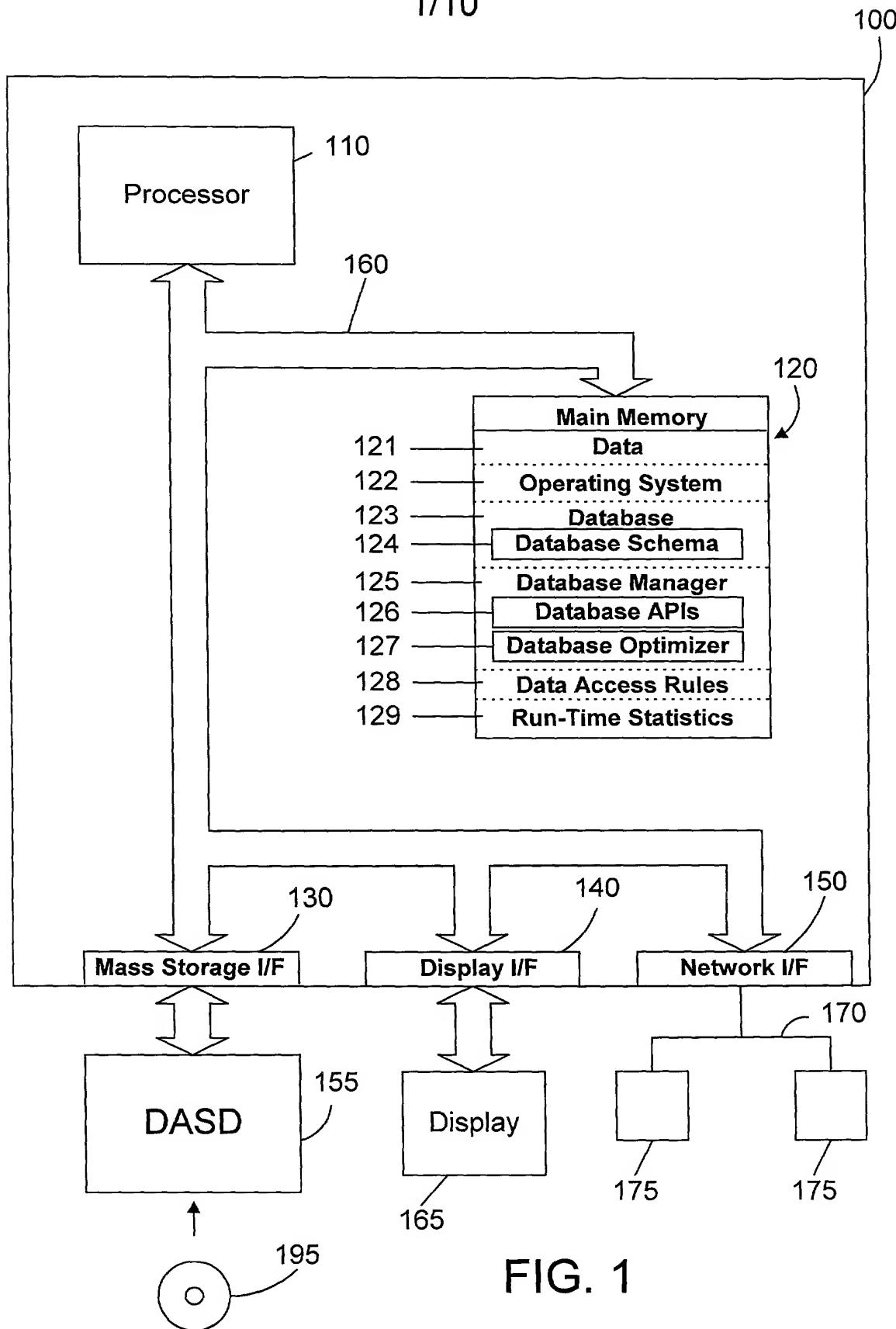


FIG. 1

Select \* from Table1 where C1=4  
AND (C2>6 OR C3!=8)

FIG. 2

Prior Art

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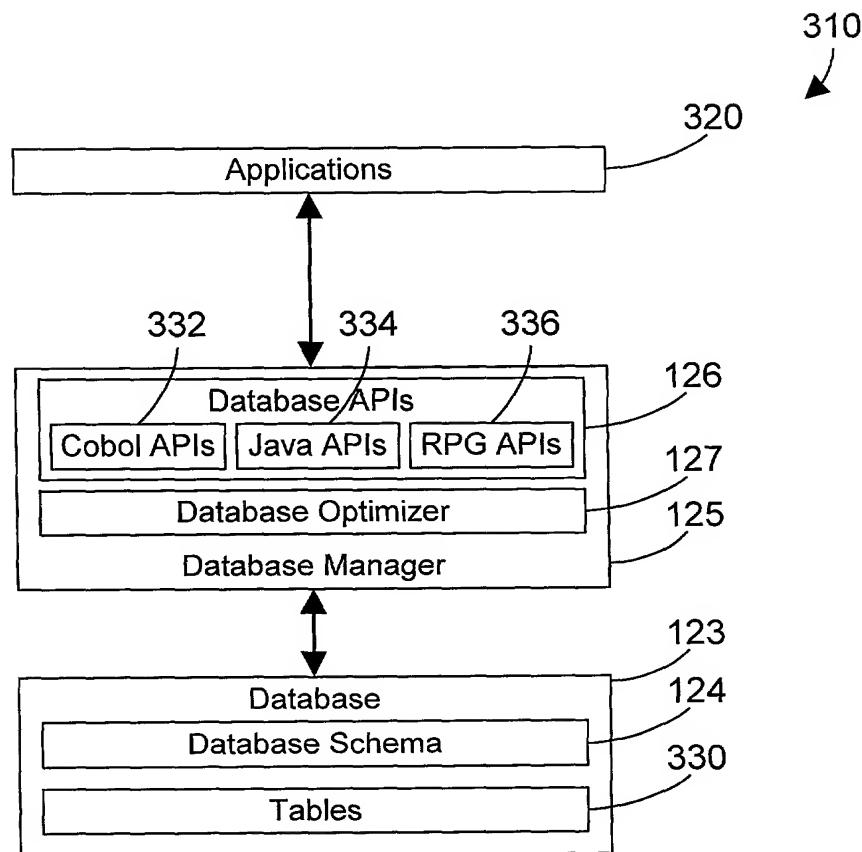


FIG. 3

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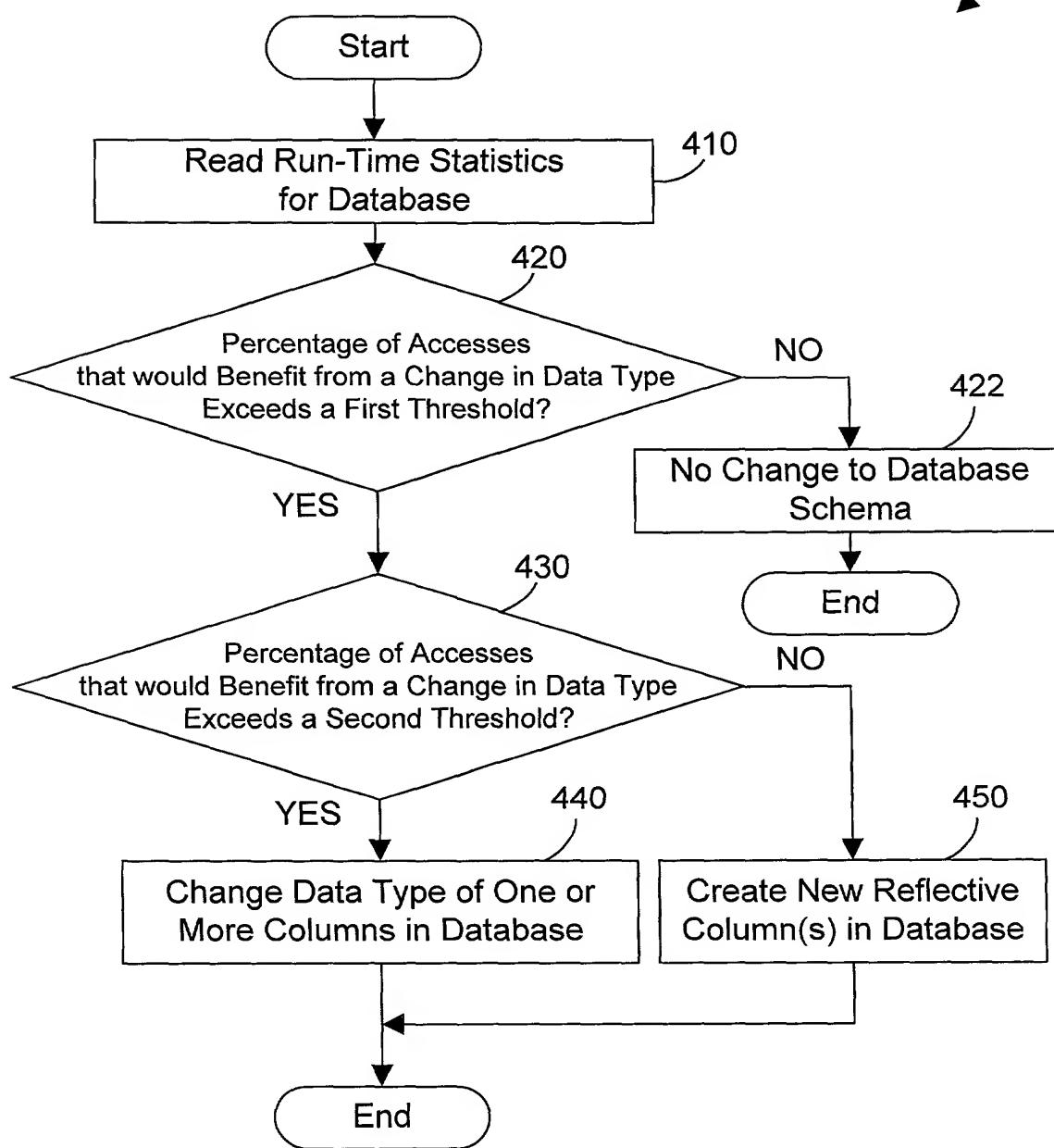


FIG. 4

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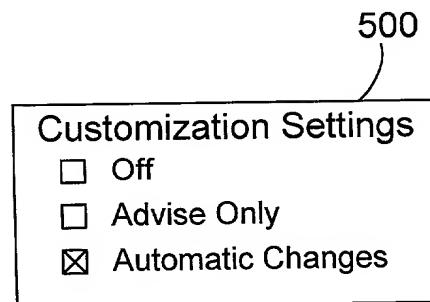


FIG. 5

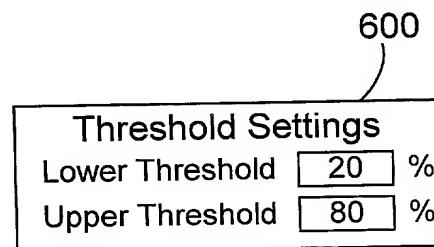


FIG. 6

710

720

char(20) name	packed decimal (6,0) id
John Smith	345987
Jane Jones	478921
Bob Johnson	157346

700

FIG. 7

700A

710

720

810

820

Char(20) name	packed decimal (6,0) id	unicode(20) name_ref	int id_ref
John Smith	345987	*	+
Jane Jones	478921	*	+
Bob Johnson	157346	*	+

FIG. 8

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unicode(20) name	int id
John Smith	345987
Jane Jones	478921
Bob Johnson	157346

FIG. 9

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SchemaName	TableName	TableOwner	Column Count
EmpSchema	Employee	user profile	2
⋮	⋮	⋮	⋮
Schema2	Table3	Owner4	5

FIG. 10 Prior Art

Column Name	Table Name	Schema Name	Data Type	Column Size
name	Employee	EmpSchema	char	20
id	Employee	EmpSchema	packed decimal	(6,0)

FIG. 11 Prior Art

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FIG. 12

SchemaName	TableName	TableOwner	Column Count	Contains Reflection
EmpSchema	Employee	user profile	2	False
⋮	⋮	⋮	⋮	⋮
Schema2	Table3	Owner4	5	False

Annotations: 1200 (leftmost), 1210 (middle), 1210 (rightmost).

FIG. 13

Column Name	Table Name	Schema Name	Data Type	Column Size	Is Reflective Column	Reflective for Column	Optimized for Paradigm
name	Employee	EmpSchema	char	20	False	Null	COBOL
id	Employee	EmpSchema	packed decimal	(6,0)	False	Null	COBOL

Annotations: 1300 (top), 1310 (middle), 1320 (right), 1330 (bottom), 1330 (far right).

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SchemaName	TableName	TableOwner	Column Count	Contains Reflection
EmpSchema	Employee	user profile	2	True
;	;	;	;	;
;	;	;	;	;
Schema2	Table3	Owner4	5	False

FIG. 14

1310 1320 1330

Column Name	Table Name	Schema Name	Data Type	Column Size	Is Reflective Column	Reflective for Column	Optimized for Paradigm
name	Employee	EmpSchema	char	20	True	name_ref	COBOL
id	Employee	EmpSchema	packed decimal	(6,0)	True	id_ref	COBOL
name_ref	Employee	EmpSchema	unicode	20	True	name	Java
id_ref	Employee	EmpSchema	int	6	True	id	Java

1310 1320 1330

FIG. 15

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SchemaName	TableName	TableOwner	Column Count	Contains Reflection
EmpSchema	Employee	user profile	2	False
...	...	...	...	...
Schema2	Table3	Owner4	5	False

FIG. 16

Column Name	Table Name	Schema Name	Data Type	Column Size	Is Reflective Column	Reflective for Column	Optimized for Paradigm
name	Employee	EmpSchema	unicode	20	False	Null	Java
id	Employee	EmpSchema	int	6	False	Null	Java

FIG. 17

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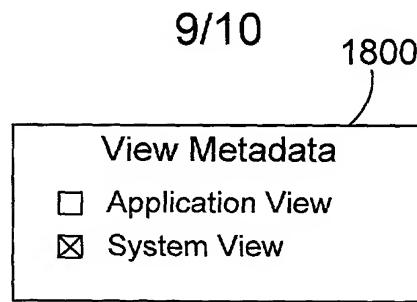


FIG. 18

10035561.6 20020222

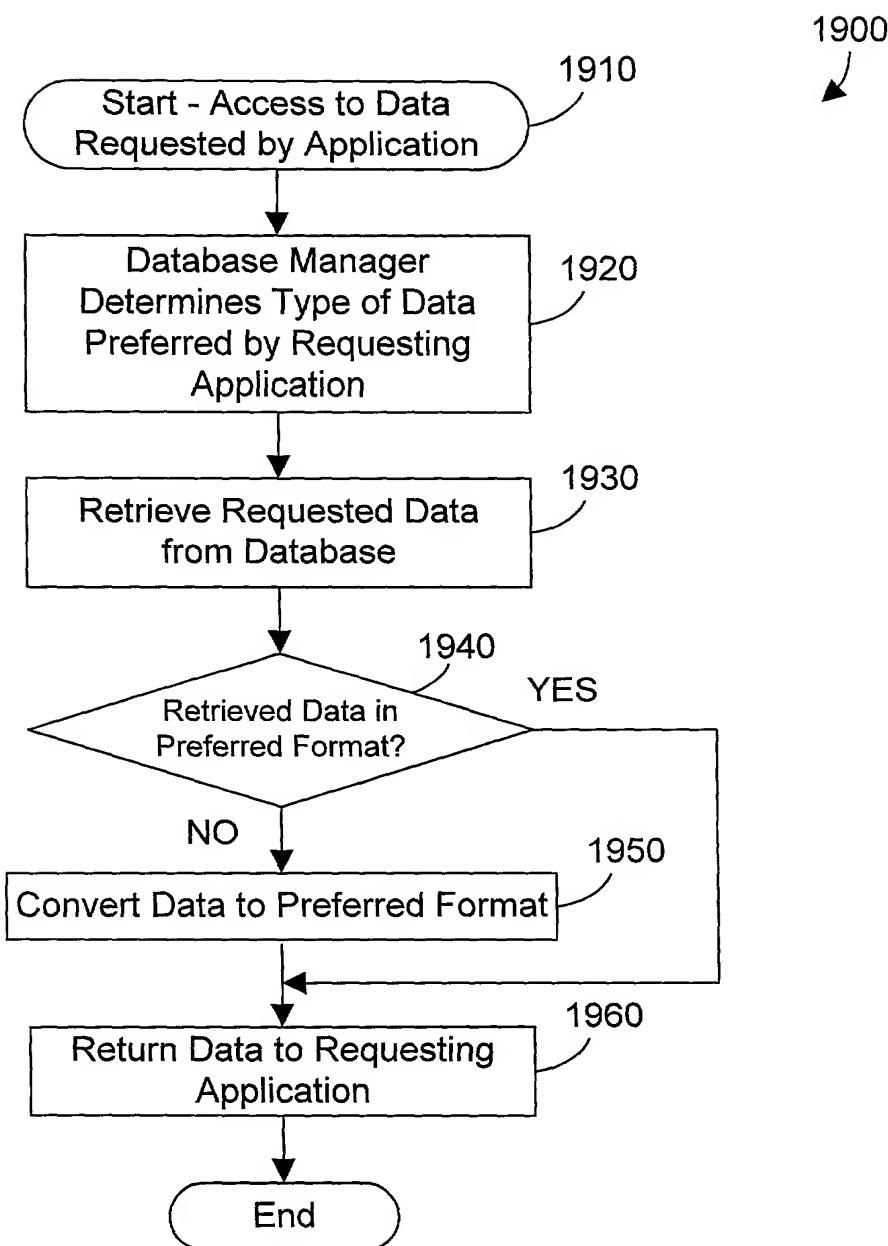


FIG. 19

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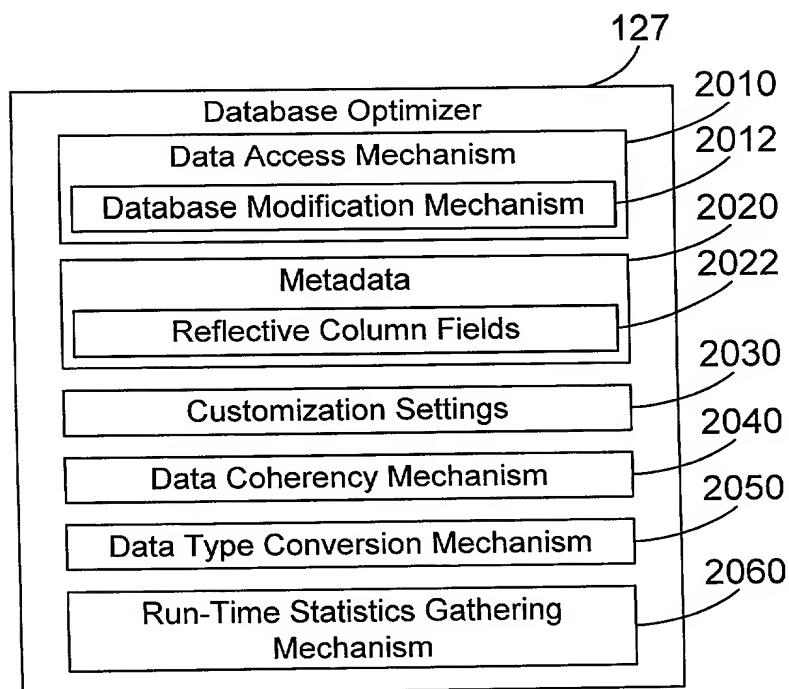


FIG. 20